

Meeting abstract

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## The treatment of bleeding peptic ulcer in the elderly

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### Background

In the last decades the incidence of peptic ulcer disease (PUD) has increased especially in the elderly. Haemorrhage is the most frequent PUD complication and its incidence is increasing in comparison to perforation and stenosis. Therapeutic endoscopy is considered the treatment of choice for bleeding ulcers, reducing the need for emergent surgical procedures to 10–20% of the cases.

### Patients and methods

This retrospective study investigates a consecutive series of 98 patients, hospitalized for bleeding peptic ulcer, within 7 years, in General Surgery Unit, University of Trieste. The incidence was slightly higher in the males (53 males and 45 females), with a median age of 68.64 years (range: 17–99). 30 patients were <65 years, 25 between 65 and 74 years, 27 between 75 and 84 years and 16 >84 years.

The position of the ulcer resulted duodenal or pre-pyloric in the majority of the cases, without any statistically significant difference in the various age groups (Pearson Chi-Square ( $p < 0.492$ )). Sixty patients presented with co-morbidities: cardiovascular in 28 cases, arterial high blood pressure in 20, respiratory in 11, neurological in 6, hepatic in 3, renal in 2, diabetes in 8, rheumatoid arthritis in 2, tumors in 5 and recent surgical procedure of inguinal hernio-plastic in 1. In 28 cases there was only one concomitant pathology, in 19 cases 2 and in 13 cases more than 2.

The management of these patients starts with a diagnostic esophago-gastro-duodenoscopy (EGDS), followed by endoscopic therapy in case of active haemorrhage.

Patients without active bleeding are treated medically with proton pump inhibitors and with *Helicobacter pylori* eradication treatment, if present. In the event of re-bleeding a new EGDS is required with further endoscopic haemostasis in the presence of active bleeding. Suspicion of bleeding is based on melena or hematemesis or a progressive decrease of the hematocrit. Patients judged technically ineligible for further endoscopic haemostasis, are treated with emergent surgery.

In the case series, EGDS was performed in 96 out of 98 patients because 1 patient refused any medical procedure and 1 underwent an emergency operation for haemorrhagic shock. In 36 cases, the EGDS failed to show any sign of active bleeding, whereas in 60 cases bleeding was present and haemostasis was performed. Of these 60 cases with active bleeding, 17 were <65 years, 16 were between 65 and 74 years, 14 were between 75 and 84 years and 13 were >84 years ( $p = 0.478$ ).

The study evaluated the incidence of re-bleeding and the type of treatment used, the mortality and the complications in the different age groups in relation to the type of treatment and the correlation between the number of endoscopic haemostasis and mortality.

The statistical analysis, univariate and multivariate, was performed with SPSS. Multivariate analysis aimed at estimating the role of age, ulcer's position, ASA score, type of treatment, number of transfusions and number of EGDSs on hospital mortality and morbidity was performed with the use of the blocks model.

## Results

Of the 60 patients with active bleeding, 40 (66.6%) had their haemorrhage resolved with the first endoscopic treatment. Their ages were: 12 <65 years, 10 between 65 and 74 years, 12 between 75 and 84 years and 6 >84 years. As for the 20 patients with re-bleeding, 17 were submitted to a new endoscopic haemostasis and 3 to surgical procedures. Of these 17 treated with a new endoscopic haemostasis, 7 were <65 years, 4 between 65 and 74 years, 5 between 75 and 84 years and 4 >84 years. The second endoscopic therapy resolved bleeding in 4 additional cases (25.6%). The remaining 13 patients experienced additional bleeding and were treated in 9 cases with a third endoscopic haemostasis and in 4 cases with surgery. The third endoscopic treatment, resolved bleeding in 2 additional cases. The remaining 7 patients experienced additional bleeding and were treated in 3 cases with a fourth endoscopy and in 4 cases with surgery. Only 1 out of the 3 cases treated endoscopically achieved the resolution of the hemorrhage whereas the 2 with persistent bleeding were treated in 1 case with a fifth endoscopic haemostasis and in 1 case with surgery. The failure of the fifth endoscopic haemostasis required surgical intervention. In conclusion, medical and endoscopic treatment, even when repeated, resolved hemorrhage in 47 out of 60 cases (78.3%). Of these 47 cases, 15 were <65 years, 12 between 65 and 74 years, 14 between 75 and 84 years and 6 >84 years ( $p = 0.764$ ). Fourteen patients underwent surgical procedures, one patient immediately and 13 due to failure of the EGDS therapy. Of these 14 cases, 4 were <64 years, 2 between 65 and 74 years, 5 between 75 and 84 years, and 3 >84 years ( $p = 0.687$ ). None of them presented with bleeding after the operation.

Seven patients out of 98 died (7.1% mortality). Two of them were between 75 and 84 years and 5 >84 years. There were no deaths among the youngest ( $p = 0.000$ ) patients. The number of deaths among ASA1, ASA2, ASA3, and ASA4 classes ( $p = 0.002$ ) were respectively 0, 4, 0 and 3. None of the 36 patients submitted only to medical therapy died; 4 of the 47 (8.5%) patients submitted to endoscopic and medical therapy died; 3 of the 14 (21.4%) patients operated died ( $p = 0.034$ ). Three patients died after the first haemostasis, 3 after the second and 1 after the fourth. There were no deaths after medical therapy, 2 deaths from hemorrhage and 2 from non-correlated pathologies after endoscopic and medical therapy. Surgical mortality was due in 1 case to hemorrhagic shock and in 2 cases to surgical complications.

Complications were present in 2 patients <65 years, none between 65 and 74 years, one patient between 75 and 84 years and 5 patients >84 years ( $p = 0.006$ ). Patients treated with medical therapy didn't experience any complication. Among those 47 patients treated with endoscopic and

medical therapy there were 4 complications. There were 5 complications among those 14 who underwent surgery ( $p = 0.001$ ). There were 3 mortal hemorrhagic bleedings, 5 mortal cardiac complications and 2 intra-abdominal abscesses.

At logistic regression the age, the ASA score and the type of treatment had resulted correlated to mortality. The same variables had resulted also correlated to morbidity. Finally, the ulcer's position, the number of transfusions and the number of EGDSs don't seem to have conditioned the results.

## Conclusion

The evaluation of the treatment outcome in our series of patients suggests that endoscopic haemostasis and medical treatment should be the first therapeutic option in ulcer cases with active bleeding. In the event of re-bleeding, repeated endoscopic haemostasis is indicated. The need for surgery is limited among cases where haemostasis can't be performed due to the position of the ulcer or the type of bleeding. In our experience, repeating the endoscopic therapy has not increased the mortality risk for the patient. In fact, deaths are more frequent after the first and the second haemostasis. In the majority of cases the resolution of the haemorrhage was achieved with the first or second endoscopic haemostasis. Successive haemostasis had a lower probability to resolve the bleeding after the second re-bleeding. In the elderly and in the patients with elevated surgical risk, the decision to extend endoscopic treatment should be made on the basis of the endoscopic findings and the patient's general condition. In the last years besides the success of angiographic embolization in the containment of massive haemorrhage must also be taken into account. The trans-catheter arterial embolization is also an effective and safe treatment in patients with duodenal ulcers re-bleeding after therapeutic endoscopy or surgery.

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